devoted to reflection from plane surfaces are excellent, and those in which refraction is treated are particularly thorough and good. The simpler geometrical treatment of lenses is very satisfactory; optical instruments and 'aids to vision' receive rather more attention (especially the latter) than is usual in books of this class. There are also a number of interesting and rather uncommon experiments and exercises combining the eye and lenses of various forms, by means of which many problems relating to vision are made clear. There is a chapter on the spectrum and color, with which the volume ends.

Both of these volumes can confidently be recommended for courses in secondary schools, or in colleges where a limited amount of elementary instruction in physics is required. T. C. M.

Electricity, One Hundred Years Ago and To-day. Edwin J. Houston. New York, W. J. Johnston & Co., Limited. 12mo., pp. 200.

This volume is built around or upon a lecture having the same title which was delivered in 1892. It was a historical discussion of the growth and development of electricity from the beginning (not one hundred years ago) to the present time. In preparing it for publication the author has increased its volume several times, and its interest and value proportionately by the addition of an extensive series of historical foot-notes. Many of these consist of long quotations from original authorities which would have been hardly suitable for a popular address, but which greatly enhance the worth of the address when printed. Some discussions of quite recent date are extensively quoted, and this volume includes, in comparatively small space, the results of much labor expended in the pursuit of exact information by reference to original papers. For this reason, if for no other, it will be welcome to all interested in the science of electricity or the art of its application. T. C. M.

Hygiene. By I. Lane Notter and R. H. Firth. London, Longmans, Green & Co. 1894.

This manual, of 374 pp. 8°, is a very concise and clear summary of what a non-professional, well educated man should know with regard to the general laws of health, the causes of disease, and the best means of combating the latter. Dr. Notter is the Professor of Hygiene in the Army Medical School at Netley, and Examiner in Hygiene in the Science and Art Department at South Kensington, and Dr. Firth is his assistant in each of these positions, hence this manual may be considered as a summary of the latest English teaching on this subject. In such subjects as heating and ventilation, house drainage, construction of buildings, hospitals, etc., its recommendations are adapted especially to the climate and customs of England, and the illustrations are solely of English appliances and methods, and this must be borne in mind by American readers.

Galton's grates, Tobin's tubes, Sheringham valves, Buchan's traps, etc., are not to be found in the market in this country, where other equally satisfactory appliances take their place.

It is not a book to be resorted to for thrilling and sensational quotations, but it will be found to give sound common sense advice upon the subjects of which it treats, and is commended to the readers of Science as a good manual of reference.

An Illustrated Dictionary of Medicine, Biology and Allied Sciences. By George M. Gould, A. B., M. D. Philadelphia, P. Blakiston, Son & Co. 1894. 4°, pp. 1633.

This is a very full and complete dictionary of medicine, printed clearly on good paper, and so bound that it will remain open at any page, a convenience not always

found in books of reference. Some of the words proposed by the author are not accepted by good authorities, as for example, 'chemic' for chemical, 'physiologic' for physiological, and in this respect the work is sometimes misleading. In the attempt to give a complete list of the bacteria many names are given which would not be accepted by a bacteriologist, the list evidently having been prepared by some one not familiar with the subject. These, however, are minor details; the main fact about the work is that it is the most complete and practically useful single volume dictionary of medical terms in the English language, and as such it is commended to the readers of SCIENCE.

NOTES.

THE INTERNATIONAL ZOÖLOGICAL CONGRESS.

THE following invitation has just been issued to the Third International Zoölogical Congress to be held in Leyden next September: "The first International Zoölogical Congress took place in Paris at the time of the International Exhibition of 1889. The second meeting was held in Moscow in 1892. There the resolution was passed that in September, 1895, this Congress would again meet in Leyden, the oldest University of the Netherlands. The Netherlands' Zoölogical Society has taken upon itself to make all the necessary arrangements for the reception and accommodation of the Congress. At the invitation of that Society, the undersigned request you to become a member of the International Congress and to attend the Leyden meeting. It appears probable that different questions, in which the interest of zoölogists in general, as well as those of specialists are involved, can be brought to a solution by mutual exchange of opinions on the occasion of such an international meeting. At any rate the way that will lead to such a solution may there be prepared. Moreover it is undoubtedly a distinct advantage to become personally acquainted with representatives of Zoölogical Science from different parts of the world. As soon as you shall have expressed your sympathy with the above stated aims of the International Zoölogical Congress we shall be glad to be allowed to append your name to a more general invitation directed to all zoölogists and morphologists, which will be brought before our fellow-workers by the aid of different periodicals. We venture to add that even in case of your not being able to attend the proposed Congress you will favor us with the expression of your sympathy with the movement. Pray to be so kind to send your answer to Dr. P. P. C. Hoek, Secretary of the Netherlands Zoölogical Society at Helder, Holland."

The invitation is signed by about one hundred naturalists in different parts of the world, including the following from this country: A. Agassiz, E. D. Cope, E. L. Mark, O. C. Marsh, H. F. Osborn, W. B. Scott and C. O. Whitman.

THE TESTING OF ELECTRICAL STREET RAILWAYS.

THE expenditure and distribution of power on electrical street railways has formed a subject of investigation on a somewhat extensive scale, and for a number of years past, by the departments of Sibley College, Cornell University. In the issue of the *Sibley College Journal* for January, Mr. James Lyman, formerly of Yale University, now engaged in special work of this character in the graduate department of the College, summarizes some of the most important results thus collated. In the performance of the work of investigation, parties are sent out, sometimes to the number of ten or a dozen, including the experts in charge and their student-assistants, divided into squads, assigned each to its special part of the work, the electricians to the measurement of current, the electrical en-